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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/937,920	01/07/2002	Wolfgang Schafer	P/2107-193	8767

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EXAMINER	
CHO, HONG SOL	

ART UNIT	PAPER NUMBER
2616	

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05/15/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

5K

Office Action Summary	Application No.	Applicant(s)	
	09/937,920	SCHAFFER, WOLFGANG	
	Examiner	Art Unit	
	Hong Cho	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 April 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 3-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 3-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. This office action is in response to the amendment filed on 04/23/2007.

Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn.

Claims 3-17 are pending in the instant application.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.
3. Claims 6-9, 12 and 14-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vanderspool, II et al (US 5261118), hereinafter referred to as Vanderspool, in view of Noguchi (US 4607257).

Re claims 15 and 17, Vanderspool discloses synchronizing a clock in a transmission station with a clock in a control station (*synchronizing a remote clock with a central clock*, abstract). Vanderspool discloses a control station with a master clock and transmission stations with a clock connected over a satellite link (*providing a central*

clock and a remote clock at separate locations, figure 1). Vanderspool fails to disclose connecting the central clock and the remote clock via a bi-directional, two-way satellite communication link. Noguchi discloses connecting an earth station and a ranging system via a bi-directional, two-way satellite communication link (figure 2). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Vanderspool by adding to it the feature of connecting the central clock and the remote clock via a bi-directional, two-way satellite communication link, as suggested by Noguchi, so that a remote clock would be synchronized to a central clock. Vanderspool discloses a comparator used for a time adjustment factor in each of the central clock and the remote clock (*the central clock and the remote clock determining measurement data*, figure 1, elements 28 and 40) by measuring the time difference determined by the central clock between the time of reception of the signal transmitted by the satellite from the remote other clock and the time of the central clock receiving the signal transmitted by the satellite (column 3, lines 27-32) and determined by the remote clock between the time of reception of the signal transmitted by the satellite from the central clock and the time of the remote clock receiving the signal transmitted by the satellite (column 3, lines 61-66), but fails to disclose determining time difference between the local time of the remote/central clock and the time of the central/remote clock when the central/remote clock receives a time signal carrying the local time of the remote/central clock. Noguchi discloses detecting a difference between the receive reference time and at which the telemetry signal is received and the transmit local time which is derived from the received telemetry signal. It would have been obvious to one

having ordinary skill in the art at the time the invention was made to modify the system of Vanderspool to implement the feature of Noguchi in determining time difference between the local time of the remote/central clock and the time of the central/remote clock when the central/remote clock receives a time signal carrying the local time of the remote/central clock for the benefit of synchronizing the remote local clock to the central reference clock without taking into account a delay time caused by satellite communication. Vanderspool discloses synchronizing the remote clock in state and rate to the central clock based on the measurement data and also on system related corrections exchanged by the signals transmitted between the central and remote clocks (column 4, lines 18-20).

Re claim 6, Vanderspool discloses connecting a remote ground station to a central clock via one or more satellites (figure 1).

Re claims 7-9, Vanderspool discloses connecting a remote ground station to a redundant system of the central clock via a multiplex method (column 2, line 19-21).

Re claim 12, Vanderspool discloses calculating time correlation factor in digital form (column 4, lines 45-55).

Re claim 14, Vanderspool discloses receiving a system timing signal from a remote station (*the respective state of the remote clocks in the for of telemetry data at the central clock*, column 2, line 67 to column 3, line 2).

Re claim 16, Vanderspool discloses periodically resynchronizing the remote clock to the central clock (*synchronizing the remote clock by operating a control loop in the remote clock*, column 4, lines 18-20).

Claims 3-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vanderspool in view of Noguchi and further in view of Malkamaki et al (US 5577024), hereinafter referred to as Malkamaki.

Re claims 3-5, Vanderspool and Noguchi disclose all of the limitations of the base claim, but fail to disclose connecting the remote ground station to the central clock via FDMA, CDMA, or TDMA. Malkamaki discloses transmitting information by using FDMA, TDMA, or CDMA (column 9, lines 1-5). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Vanderspool and Noguchi to use different multiple access schemes of Malkamaki in connecting the remote ground station to the central clock so that a particular multiple access scheme would be employed to provide the following benefit: CDMA would allow numerous signals to occupy a single transmission for optimizing the use of available bandwidth. TDMA would increase the amount of data that can be carried by dividing each cellular channel into three time slots. FDMA would allow a single base station to serve many callers by dividing a radio frequency into several channels by splitting the frequency band into distinct segments, which are assigned to various callers.

Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Vanderspool in view of Noguchi and further in view of Zenick et al (US 6128469), hereinafter referred to as Zenick.

Re claim 10, Vanderspool and Noguchi disclose all of the limitations of the base claim, but fail to disclose locating a transparent transponder on board the satellite.

Zenick discloses locating a transparent transponder on board the satellite (column 7, lines 4-7). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Vanderspoo and Noguchi to locate a transparent transponder on board the satellite to obviate the need for storage and controller within the satellite.

Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Vanderspoo in view of Noguchi and further in view of Wiedeman et al (US 5884142), hereinafter referred to as Wiedeman.

Re claim 11, Vanderspoo and Noguchi disclose all of the limitations of the base claim, but fail to disclose locating a regenerative transponder on board the satellite. Wiedeman discloses locating a regenerative transponder on board the satellite (column 7, lines 4-7). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Vanderspoo and Noguchi to locate a regenerative transponder on board the satellite to increase performance with the help of a demodulator and modulator (column 24, lines 16-20).

Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Vanderspoo in view of Noguchi and further in view of Witsaman et al (US 5416808), hereinafter referred to as Witsaman.

Re claim 13, Vanderspoo and Noguchi disclose all of the limitations of the base claim, but fail to disclose supplying a user with a warning signal if the deviation of the

remote clock with respect to the central clock exceeds a limit value. Witsaman discloses resetting a counter if the difference between the counter time and the reference time is outside the tolerance value (column 9, line 67 to column 10, line 2). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Vanderspool and Noguchi by adding to it the feature of notifying a user with a signal to reset the counter for larger adjustment.

Response to Arguments

4. Applicant's arguments with respect to claims 3-17 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hong Cho whose telephone number is 571-272-3087. The examiner can normally be reached on Mon-Fri during 7 am to 4 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema Rao can be reached on 571-272-3174. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

hc
Hong Cho
Patent Examiner
5/11/07

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